

Art Unit: 1795

## **DETAILED ACTION**

### ***Response to Amendment***

This office action is responsive to the amendment filed 11/12/09. The applicant has overcome the objections, the 35 USC 112 rejections, and the 35 USC 102 rejections over the AAPA and JP'291. Refer to the abovementioned amendment for additional details on applicant's rebuttal arguments and remarks. However, all pending claims (including new claims 47-50) are finally rejected over the same art as well as new grounds of rejection as formulated hereinbelow and for the reasons of record:

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 10/15/09 was considered by the examiner.

### ***Drawings***

2. Some replacement drawings were received on 11/12/09. These drawings are acceptable.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

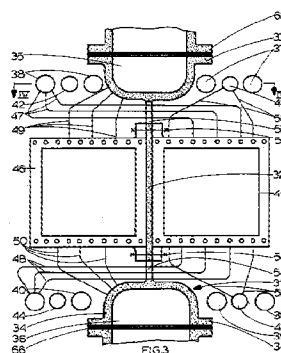
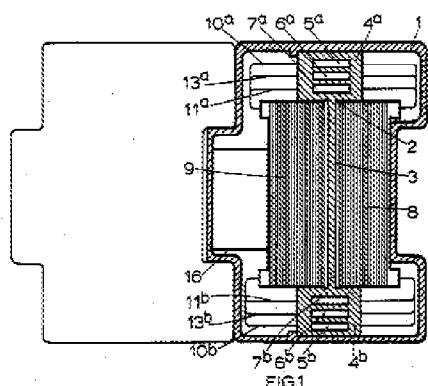
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. (at least) Claims 24 and 47-49 is rejected under 35 U.S.C. 102(b) as being **clearly** anticipated by van Linden 4176213.

As to claim 24:

**FIGURES 1 and 3** of van Linden clearly depicts a fuel cell battery unit containing a number of fuel cell blocks (module) including an external member, an external restraining member; and a module frame wherein the external restrainer member is placed between the fuel cell module frame and the external member. The module frame includes a wall which surrounds the fuel cell blocks and extends in a cell stacking direction (FIGURES 1 and 3).



**Examiner's note:** in this case, combinations of the fuel cell blocks with element 1 with element 4a and with elements 10a, or 13a, or 11a, alone or in combination, fully satisfy the claimed requirement of providing a plurality of cell modules in a stacking direction, and external member (element 1); and an external restrainer member (any one of elements 10a, 13a, or 11a, or even a portion of 4a); and a module frame having a first wall (either element 4a or a portion thereof, or element 11a, or a portion thereof) in the stacking direction, wherein the external member is between an internal surface of the external member and an external surface of the first wall. The structure of FIGURE 1 of van Linden is substantially identical to applicant's FIGURE 1 (***emphasis added***). Applicant is reminded that a recitation in the claimed invention

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*must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it **meets** the claim. The examiner sees no substantial differences in terms of both structure and functionality (with respect to the external member, external restrainer member and module frame with first wall) between applicant's FIGURE 1 and FIGURE 1 of van Linden.*

As to claims 47-49:

In **FIGURE 1**, each fuel cell block/module is spaced apart and separated by element 3, thereby, providing a space therebetween; and either elements 4a and 11a, alone or in combination, are taken to represent the respective module frame over a portion of two fuel cell blocks/modules, and/or the walls which are away from each other.

Thus, the present claims are anticipated.

5. (at least) Claims 24 and 47-49 are rejected under 35 U.S.C. 102(b) as being **clearly** anticipated by German publication DE 196 45 111.

As to claim 24:

**FIGURES 1-2** and **FIGURE 1 (rotated view)** of DE'111 clearly depict a fuel cell module unit containing a number of fuel cell blocks (module) including an external member, an external restraining member (FIGURES 1 & 2); and a module frame wherein the external restrainer member is placed between the fuel cell module frame and the external member (FIGURES 1 & 2). The module frame includes a wall which surrounds the fuel cell blocks and extends in a cell stacking direction (FIGURES 1 & 2).

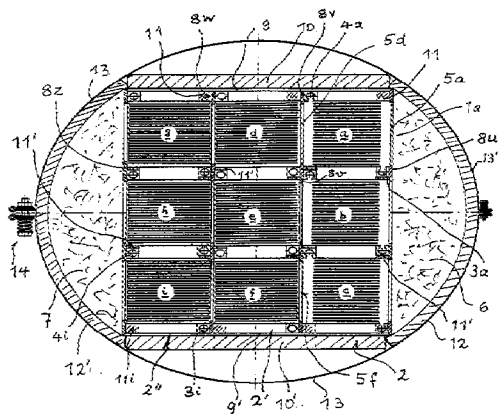


Fig. 1

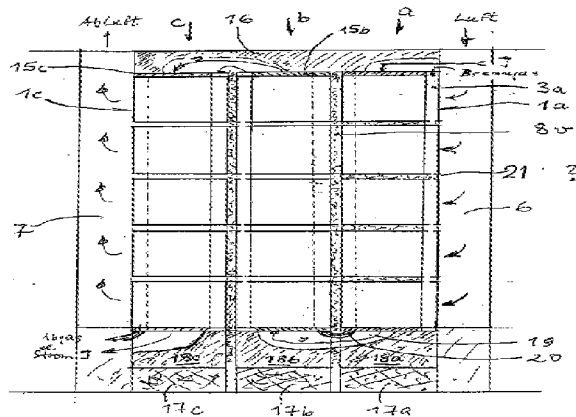
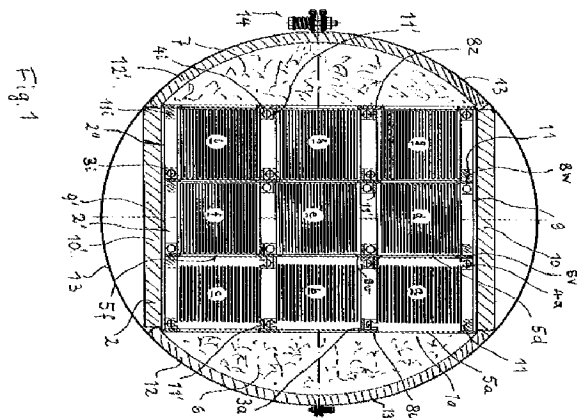


Fig. 2

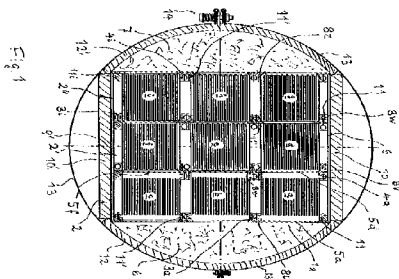
**Examiner's note:** in this case, combinations of the fuel cell blocks with element 13 with element 14 with element 4i and/or element 7 and/or the element extending along the stacking direction immediately over the fuel cell blocks/modules, alone or in combination, fully satisfy the claimed requirement of providing a plurality of cell modules in a stacking direction, and external member (element 13 or 14); and an external restrainer member (any one of elements 13 if element 14 is chosen as the external member or element 7 if element 13 is chosen as the external member, or even **portions** thereof); and a module frame having a first wall (either element 4i or a portion thereof, or element 7, or a portion thereof) in the stacking direction, wherein the external member is between an internal surface of the external member and an external surface

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of the first wall. The structure of FIGURE 1 of DE'111 is substantially identical to applicant's FIGURE 1 (**emphasis added**). Applicant is reminded that a recitation in the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it **meets** the claim. The examiner sees no substantial differences in terms of both structure and functionality (with respect to the external member, external restrainer member and module frame with first wall) between applicant's FIGURE 1 and FIGURE 1 of DE'111. Note that the present claims fail to define the specific structural or physical characteristics of the external member, the external restrainer member and the wall. Thus, ANY member capable of being external, or of restraining, or blocking or covering reads on them.

As to claims 47-49:

In **FIGURE 1 (rotated view)**, each fuel cell block/module is spaced apart and separated by separating element interposed therebetween, thereby, providing a space therebetween; and the element on over component 4i or the element extending along the stacking direction immediately over the fuel cell blocks/modules or element 7, alone or in combination, are taken to represent the respective module frame over a portion of two fuel cell blocks/modules, and/or the walls which are away from each other.



***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

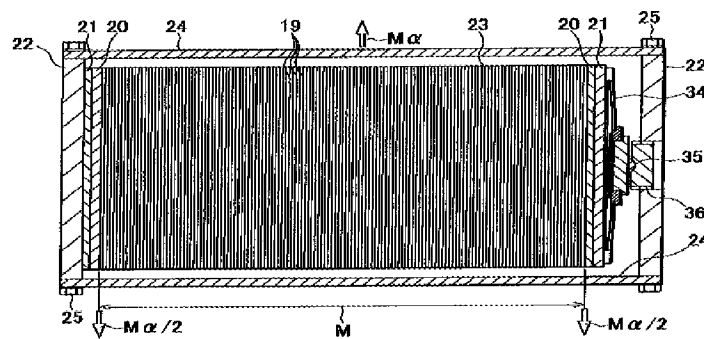
9. Claims 24-30, 32-37 and 45-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admission of Prior Art (heretofore the AAPA) (*applicant's specification at paragraphs 0003-0017 and FIGURES 30-31*) in view of van Linden 4176213.

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As to claims 24 and 34:

The AAPA teaches that in a conventional stacking technique, modules are retained by using a spring 34 which is disposed on an end of a cell stack in the cell stack direction, a swing portion 35 and an adjusting screw 36. The modules of stack 23 are retained with the spring force of the spring 34 providing a constant load in the cell stacking direction. Also, in some cases, the modules are restraining from outside the cell stack through the use of an external restrainer member (*applicant's specification at 0007*).

**FIGURE 31** of the AAPA clearly illustrates a fuel cell assembly including multiple modules or a plurality of stacked cells; either elements 21, or 20 in combination with the upper and lower element (right below and above reference number 25) do form a module frame surrounding or enclosing the cell assembly and extending in a cell stacking direction (See FIGURE 31). Spring 34 can act as the external restrainer member located between any one of elements 21 or 20 and the swing portion 35 and/or an adjusting screw 36 which can serve as the external member. *Therefore, the fuel cell assembly arrangement of the AAPA reads on applicant's invention of claim 24 as instantly recited.*

**FIG .31**

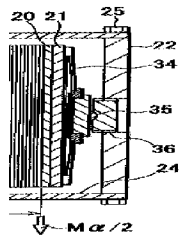
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As to claims 25-26 and 28-29:

As shown in **FIGURE 31**, it is apparent that elements 20, 21 are capable of leaving the stacked cells unrestrained if necessary. Since the cells are stacked to one another, it can be said that they are adhered (in contact with) to each other.

As to claim 27:

Enlarged section of FIGURE 31 illustrates the presence of a space provided therebetween which can assist in relieving thermal expansion.



As to claim 28-29 and 32:

As illustrated in FIGURE 31, note that the stacked cells are disposed in series in the stacking direction; that there is disclosed a spring feature including a spring 34 which is disposed on an end of a cell stack in the cell stack direction, a swing portion 35 and an adjusting screw 36 (0007 & FIGURE 31). There are also the upper and lower elements (right below and above reference number 25) which represent the wall perpendicular to the cell stacking direction and they two have the ability of being displaceable if necessary. Note that the term displaceable only requires the ability of being displaced.

As to claim 30 and 33:

The AAPA mentions the presence of a coolant passage (0005). Since coolant is passing therethrough, it is expectable that certain amount of pressure be exerted in the surrounding areas.



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As to claim 35:

Fuel cell assembly of **FIGURE 31** must include an element or member to electrically connect the fuel cell to an external device so as to be able to draw generated power out of the assembly. Thus, the presence of such an element or member is inherent.

As to claim 36:

Elements 20 and 21 can be taken to represent the two frame members are separated from each other (See FIGURE 31). On the other hand, element 22 is also separate and suitable for that purpose. Note that the present claims do not define any particular structural or spatial orientation.

As to claim 37:

The AAPA shows that gaskets 32 and adhesive seals 33 are provided in order to seal channels containing a groove (FIGURE 30 and 0005).

As to claim 45-46:

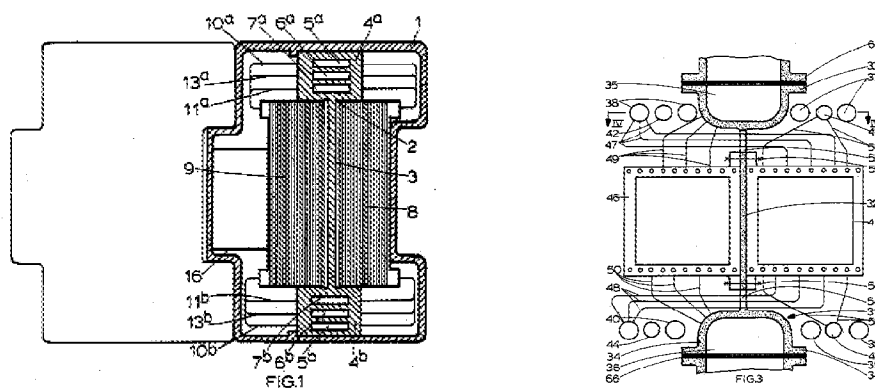
There is disclosed a spring feature including a spring 34 which is disposed on an end of a cell stack in the cell stack direction, a swing portion 35 and an adjusting screw 36 (0007 & FIGURE 31). Such a *spring* feature is made of a deformable material. Note that the swing portion 35 and/or an adjusting screw 36 serve as the external member which can be part of the casing and they are all integrated with the spring feature which applies tension. Further note that elements 22 can be used for that purpose as well.

The AAPA is cited herein for its discussion of the fuel cell block/arrangement as shown and discussed above. However, the preceding reference does not expressly disclose the specific stacking direction of external restrainer member and the module frame/first wall; and the specific module frame/wall placement (as recited in dependent claims 47-49).

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As to claim 24:

**FIGURES 1 and 3** of van Linden clearly depicts a fuel cell battery unit containing a number of fuel cell blocks (module) including an external member, an external restraining member; and a module frame wherein the external restrainer member is placed between the fuel cell module frame and the external member. The module frame includes a wall which surrounds the fuel cell blocks and extends in a cell stacking direction (FIGURES 1 and 3).



**Examiner's note:** in this case, combinations of the fuel cell blocks with element 1 with element 4a and with elements 10a, or 13a, or 11a, alone or in combination, fully satisfy the claimed requirement of providing a plurality of cell modules in a stacking direction, and external member (element 1); and an external restrainer member (any one of elements 10a, 13a, or 11a, or even a portion of 4a); and a module frame having a first wall (either element 4a or a portion thereof, or element 11a, or a portion thereof) in the stacking direction, wherein the external member is between an internal surface of the external member and an external surface of the first wall. The structure of FIGURE 1 of van Linden is substantially identical to applicant's FIGURE 1 (**emphasis added**). Applicant is reminded that a recitation in the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is

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*capable of performing the intended use, then it **meets** the claim. The examiner sees no substantial differences in terms of both structure and functionality (with respect to the external member, external restrainer member and module frame with first wall) between applicant's FIGURE 1 and FIGURE 1 of van Linden.*

As to claims 47-49:

In **FIGURE 1**, each fuel cell block/module is spaced apart and separated by element 3, thereby, providing a space therebetween; and either elements 4a and 11a, alone or in combination, are taken to represent the respective module frame over a portion of two fuel cell blocks/modules, and/or the walls which are away from each other.

In view of the above, it would have been within the purview of a skilled artisan at the time the invention was made to use and place the external restrainer member and the module frame/first wall of van Linden and as shown in van Linden in the fuel cell assembly of the AAPA as van Linden is concerned with providing all those members in the manner disclosed therein for the purpose of improving system architecture, mechanical stability, structural integrity, and fluid distribution of the fuel cell assembly, and enhancing power generating characteristic of the fuel cell system. *Moreover, it has been held that re-arrangement, reversal or duplication of parts is obvious. Succinctly stated, fact that a claimed component or element is structurally re-arranged, reversed or duplicated is not sufficient by itself to patentably distinguish over an otherwise old feature unless there are new or unexpected results as it is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed external restrainer member or module frame with a wall was significant. In re Japikse 86 USPQ 70. In re Kuhle 188 USPQ 7. In re Gazda 104 USPQ 400. In*

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*re Harza 124 USPQ 378. (Refer to MPEP 2144.04 [R-1] Legal Precedent as Source of Supporting Rationale: VI. Reversal, Duplication, OR Rearrangement of Parts).*

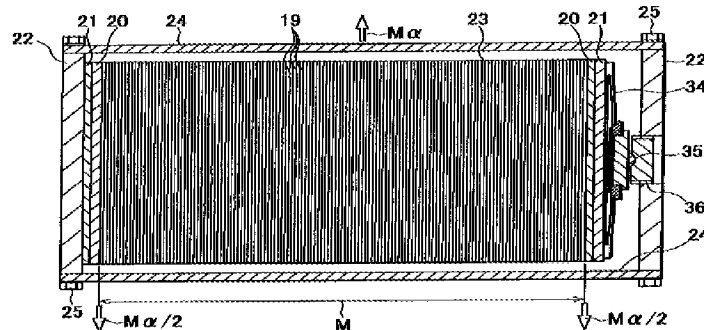
10. Claims 24-30, 32-37 and 45-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admission of Prior Art (heretofore the AAPA) (*applicant's specification at paragraphs 0003-0017 and FIGURES 30-31*) in view of German publication DE 196 45 111.

As to claims 24 and 34:

The AAPA teaches that in a conventional stacking technique, modules are retained by using a spring 34 which is disposed on an end of a cell stack in the cell stack direction, a swing portion 35 and an adjusting screw 36. The modules of stack 23 are retained with the spring force of the spring 34 providing a constant load in the cell stacking direction. Also, in some cases, the modules are restraining from outside the cell stack through the use of an external restrainer member (*applicant's specification at 0007*).

**FIGURE 31** of the AAPA clearly illustrates a fuel cell assembly including multiple modules or a plurality of stacked cells; either elements 21, or 20 in combination with the upper and lower element (right below and above reference number 25) do form a module frame surrounding or enclosing the cell assembly and extending in a cell stacking direction (See FIGURE 31). Spring 34 can act as the external restrainer member located between any one of elements 21 or 20 and the swing portion 35 and/or an adjusting screw 36 which can serve as the external member. *Therefore, the fuel cell assembly arrangement of the AAPA reads on applicant's invention of claim 24 as instantly recited.*

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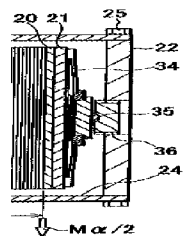
**FIG. 31**

As to claims 25-26 and 28-29:

As shown in **FIGURE 31**, it is apparent that elements 20, 21 are capable of leaving the stacked cells unrestrained if necessary. Since the cells are stacked to one another, it can be said that they are adhered (in contact with) to each other.

As to claim 27:

Enlarged section of FIGURE 31 illustrates the presence of a space provided therebetween which can assist in relieving thermal expansion.



As to claim 28-29 and 32:

As illustrated in FIGURE 31, note that the stacked cells are disposed in series in the stacking direction; that there is disclosed a spring feature including a spring 34 which is disposed on an end of a cell stack in the cell stack direction, a swing portion 35 and an adjusting screw 36 (0007 & FIGURE 31). There are also the upper and lower elements (right below and above

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reference number 25) which represent the wall perpendicular to the cell stacking direction and they two have the ability of being displaceable if necessary. Note that the term displaceable only requires the ability of being displaced.

As to claim 30 and 33:

The AAPA mentions the presence of a coolant passage (0005). Since coolant is passing therethrough, it is expectable that certain amount of pressure be exerted in the surrounding areas.

As to claim 35:

Fuel cell assembly of **FIGURE 31** must include an element or member to electrically connect the fuel cell to an external device so as to be able to draw generated power out of the assembly. Thus, the presence of such an element or member is inherent.

As to claim 36:

Elements 20 and 21 can be taken to represent the two frame members are separated from each other (See FIGURE 31). On the other hand, element 22 is also separate and suitable for that purpose. Note that the present claims do not define any particular structural or spatial orientation.

As to claim 37:

The AAPA shows that gaskets 32 and adhesive seals 33 are provided in order to seal channels containing a groove (FIGURE 30 and 0005).

As to claim 45-46:

There is disclosed a spring feature including a spring 34 which is disposed on an end of a cell stack in the cell stack direction, a swing portion 35 and an adjusting screw 36 (0007 & FIGURE 31). Such a *spring* feature is made of a deformable material. Note that the swing portion 35 and/or an adjusting screw 36 serve as the external member which can be part of the

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casing and they are all integrated with the spring feature which applies tension. Further note that elements 22 can be used for that purpose as well.

The AAPA is cited herein for its discussion of the fuel cell block/arrangement as shown and discussed above. However, the preceding reference does not expressly disclose the specific stacking direction of external restrainer member and the module frame/first wall; and the specific module frame/wall placement (as recited in dependent claims 47-49).

As to claim 24:

**FIGURES 1-2 and FIGURE 1 (rotated view)** of DE'111 clearly depict a fuel cell module unit containing a number of fuel cell blocks (module) including an external member, an external restraining member (FIGURES 1 & 2); and a module frame wherein the external restrainer member is placed between the fuel cell module frame and the external member (FIGURES 1 & 2). The module frame includes a wall which surrounds the fuel cell blocks and extends in a cell stacking direction (FIGURES 1 & 2).

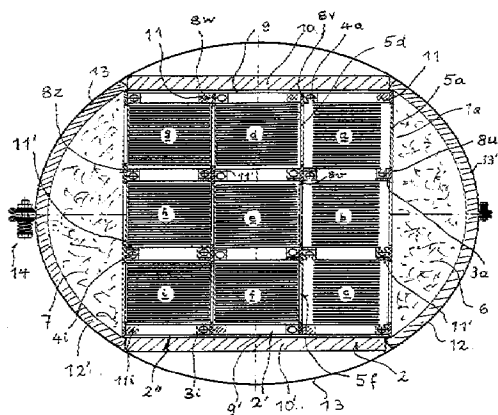
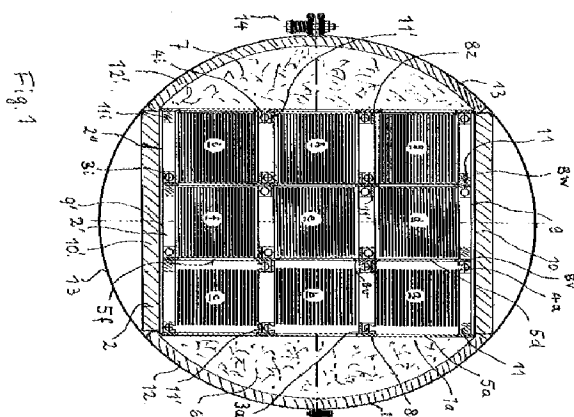


FIG. 1



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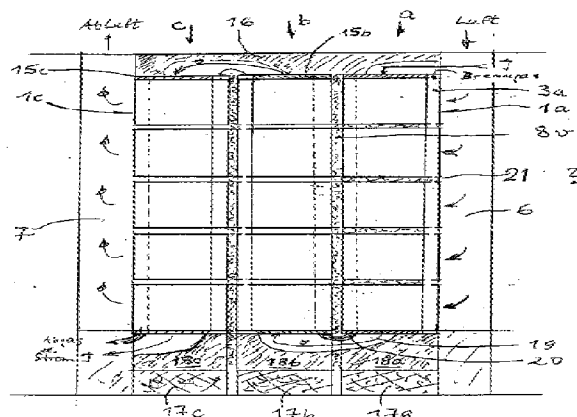


Fig. 2

**Examiner's note:** in this case, combinations of the fuel cell blocks with element 13 with element 14 with element 4i and/or element 7 and/or the element extending along the stacking direction immediately over the fuel cell blocks/modules, alone or in combination, fully satisfy the claimed requirement of providing a plurality of cell modules in a stacking direction, and external member (element 13 or 14); and an external restrainer member (any one of elements 13 if element 14 is chosen as the external member or element 7 if element 13 is chosen as the external member, or even **portions** thereof); and a module frame having a first wall (either element 4i or a portion thereof, or element 7, or a portion thereof) in the stacking direction, wherein the external member is between an internal surface of the external member and an external surface of the first wall. The structure of FIGURE 1 of DE'111 is substantially identical to applicant's FIGURE 1 (**emphasis added**). Applicant is reminded that a recitation in the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it **meets** the claim. The examiner sees no substantial differences in terms of both structure and functionality (with respect to the external member, external restrainer member and module frame with first wall) between applicant's

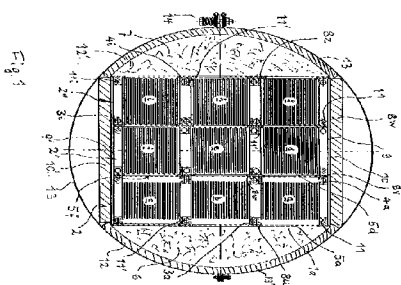


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*FIGURE 1 and FIGURE 1 of DE'111. Note that the present claims fail to define the specific structural or physical characteristics of the external member, the external restrainer member and the wall. Thus, ANY member capable of being external, or of restraining, or blocking or covering reads on them.*

As to claims 47-49:

In **FIGURE 1 (rotated view)**, each fuel cell block/module is spaced apart and separated by separating element interposed therebetween, thereby, providing a space therebetween; and the element on over component 4i or the element extending along the stacking direction immediately over the fuel cell blocks/modules or element 7, alone or in combination, are taken to represent the respective module frame over a portion of two fuel cell blocks/modules, and/or the walls which are away from each other.



In view of the above, it would have been within the purview of a skilled artisan at the time the invention was made to use and place the external restrainer member and the module frame/first wall of DE'111 and as shown in DE'111 in the fuel cell assembly of the AAPA as DE'111 is concerned with providing all those members in the manner disclosed therein for the purpose of improving system architecture, mechanical stability, structural integrity, and fluid distribution of the fuel cell assembly, and enhancing power generating characteristic of the fuel cell system. *Moreover, it has been held that re-arrangement, reversal or duplication of parts is*

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*obvious. Succinctly stated, fact that a claimed component or element is structurally re-arranged, reversed or duplicated is not sufficient by itself to patentably distinguish over an otherwise old feature unless there are new or unexpected results as it is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed external restrainer member or module frame with a wall was significant. In re Japikse 86 USPQ 70. In re Kuhle 188 USPQ 7. In re Gazda 104 USPQ 400. In re Harza 124 USPQ 378. (Refer to MPEP 2144.04 [R-1] Legal Precedent as Source of Supporting Rationale: VI. Reversal, Duplication, OR Rearrangement of Parts).*

11. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admission of Prior Art (heretofore the AAPA) (*applicant's specification at paragraphs 0003-0017 and FIGURES 30-31*) in view of either van Linden 4176213 or DE'111 as applied to claim 24 above, and further in view of either US 5824199 or JP 09-092324.

The AAPA, van Linden and DE'111 is applied, argued and incorporated herein for the reasons set forth above. However, the preceding prior art does not expressly disclose the specific cell monitor presser.

However, it is known in the art to use electrochemical cell having an inflatable member for providing uniform contact pressure and thus uniform electrical contact within the cell assembly. Such inflatable member comprises a pair of flexible plates (Applicant's specification at 0011 in reference to US 5824199).

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Likewise, it is known in the art to have cell modules including frame clamping and an external enclosure to enhance contact pressure (Applicant's specification at paragraph 0012 in reference to JP 09-092324).

Thus, in this case, since the present claim do not specifically define the structure, spatial orientation or functional arrangement of the cell monitor presser, it is not unreasonable to state that the pressing members disclosed above are capable of maintaining uniform contact pressure, thereby being presser.

By combining these teachings, it would have been obvious to a skilled artisan at the time the invention was made to use the specific cell monitor presser of either US 5824199 or JP'324 in the fuel cell assembly of the AAPA, van Linden and DE'111 as it is known in the art to use the disclosed pressing members for providing uniform contact pressure and thus uniform electrical contact within the cell assembly. Thus, mechanical stability and electrical conductivity are enhanced.

12. Claims 39, 41-43 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admission of Prior Art (heretofore the AAPA) (*applicant's specification at paragraphs 0003-0017 and FIGURES 30-31*) in view of either van Linden 4176213 or DE'111 as applied to claim 24 above, and further in view of German document DE 10048801.

The AAPA, van Linden and DE'111 is applied, argued and incorporated herein for the reasons set forth above. However, the preceding prior art does not expressly disclose the specific non-electrically conductive material; and the specific elastic member.

As to claim 39:

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The German document'801 discloses that it is known in the art to have fuel cell modules surrounded by an insulating layer (applicant's specification at 0009).

As to claims 41-43 and 50:

The German document'801 discloses that it is known in the art to have fuel cell modules surrounded by elastic material (applicant's specification at 0009). The specific friction coefficient is an inherent characteristic associated with the elastic material. *It is noted that the module cell is operatively connected to an end cell of the cell assembly, or at least, to certain degree, it is structurally connected to said end cell.*

By combining these teachings, it would have been obvious to a skilled artisan at the time the invention was made to use both the specific non-electrically conductive material and the specific elastic member of German document'801 in the fuel cell assembly of the AAPA, van Linden and DE'111 as the German document'801 teaches that such materials find useful application for surrounding and/or enclosing fuel cell modules due to their chemical compatibility and that such materials are also provided to relieve mechanical movement of the modules due to thermal expansion.

13. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admission of Prior Art (heretofore the AAPA) (*applicant's specification at paragraphs 0003-0017 and FIGURES 30-31*) in view of either van Linden 4176213 or DE'111 as applied to claim 24 above, and further in view of JP 09-092324.

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The AAPA, van Linden and DE'111 are applied, argued and incorporated herein for the reasons set forth above. However, the preceding prior art does not expressly disclose the specific module frame made of a resin.

However, it is known in the art to have cell modules surrounded by a material comprising a resin which is provided between multi-cell modules and inner wall of a frame as well as between an outer wall of the frame and the enclosure (Applicant's specification at paragraph 0012).

By combining these teachings, it would have been obvious to a skilled artisan at the time the invention was made to use the specific module frame containing a resin in the fuel cell assembly of the AAPA, van Linden and DE'111 as it is known in the art to use resin material as part of the module frames provided between multi-cell modules, or inner wall of a frame as well as between an outer wall of the frame and the enclosure. Thus, such a material finds suitable utility for enclosing or covering electrical devices.

14. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admission of Prior Art (heretofore the AAPA) (*applicant's specification at paragraphs 0003-0017 and FIGURES 30-31*) in view of either van Linden 4176213 or DE'111 in view of German document DE 10048801 as applied to claim 41 above, and further in view of Nishiumi et al 2002/0187382.

The AAPA, van Linden, DE'111 and the German document'801 are applied, argued and incorporated herein for the reasons set forth above. However, none of the preceding references expressly discloses the specific wire embedded in the module frame.

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Nishiumi et al shows a fuel cell module 120 (0027/FIGURE 1) and a power supply cable 166 (*acting as the wire*) extending from the fixing portion 152 of the service plug 150 through the casing 122 and outwardly of the casing 122 (0037/FIGURE 1). *That is to say, power supply cable is embedded in the module frame.* In addition to that, there is disclosed a flexible bus bar 142 (*acting as the wire*) within the fuel cell module (0032/FIGURE 1).

By combining these teachings, it would have been obvious to a skilled artisan at the time the invention was made to use the specific wire embedded in the module frame of Nishiumi et al in the fuel cell assembly of the AAPA, van Linden, DE'111 and the German document'801 as Nishiumi et al teach that such an embedded arrangement allows to maintain a satisfactory electrical connection while assuring safety against leakage or short-circuiting. Hence, electrical interconnecting characteristics and safety of the fuel cell module assembly are improved.

### ***Response to Arguments***

15. Applicant's arguments, filed 11/12/09, with respect to the 102 rejection over the AAPA have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the AAPA in combination with either van Linden or DE'111. In sum, the structural or spatial arrangement shortcomings of the AAPA as now articulated by the applicant and presented in the amended claims have been duly noted, taken into consideration and properly addressed (see items 9-10 *supra*).

16. Applicant's arguments with respect to the 102 rejection over JP'291 have been fully considered and are persuasive. That 102 rejection has been withdrawn.

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17. Applicant's arguments filed 11/12/09 with respect to the 102 rejection over van Linden and DE' 111 have been fully considered but they are not persuasive.

In this regard, Applicant appears to submit that neither van Linden nor DE' 111 includes *"an external member, and an external restrainer member provided along the external member in the stacking direction"* and *"wherein the external restrainer member is provided between an internal surface of the external member and an external surface of the first wall of the module frame...and contacts the internal surface of the external member and the external surface of the first wall"*. In reply, the following is noted as to van Linden and DE' 111.

For instance, in the van Linden reference, combinations of the fuel cell blocks with element 1 with element 4a and with elements 10a, or 13a, or 11a, alone or in combination, fully satisfy the claimed requirement of providing a plurality of cell modules in a stacking direction, and external member (element 1); and an external restrainer member (any one of elements 10a, 13a, or 11a, or even a portion of 4a); and a module frame having a first wall (either element 4a or a portion thereof, or element 11a, or a portion thereof) in the stacking direction, wherein the external member is between an internal surface of the external member and an external surface of the first wall. The structure of FIGURE 1 of van Linden is substantially identical to applicant's FIGURE 1 (**emphasis added**). Applicant is reminded that a recitation in the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it **meets** the claim. The examiner sees no substantial differences in terms of both structure and functionality (with respect to the external

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member, external restrainer member and module frame with first wall) between applicant's

FIGURE 1 and FIGURE 1 of van Linden.

Likewise, in the DE'111 reference, combinations of the fuel cell blocks with element 13 with element 14 with element 4i and/or element 7 and/or the element extending along the stacking direction immediately over the fuel cell blocks/modules, alone or in combination, fully satisfy the claimed requirement of providing a plurality of cell modules in a stacking direction, and external member (element 13 or 14); and an external restrainer member (any one of elements 13 if element 14 is chosen as the external member or element 7 if element 13 is chosen as the external member, or even **portions** thereof); and a module frame having a first wall (either element 4i or a portion thereof, or element 7, or a portion thereof) in the stacking direction, wherein the external member is between an internal surface of the external member and an external surface of the first wall. The structure of FIGURE 1 of DE'111 is substantially identical to applicant's FIGURE 1 (**emphasis added**). Applicant is reminded that a recitation in the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it **meets** the claim. The examiner sees no substantial differences in terms of both structure and functionality (with respect to the external member, external restrainer member and module frame with first wall) between applicant's FIGURE 1 and FIGURE 1 of DE'111. Note that the present claims fail to define the specific structural or physical characteristics of the external member, the external restrainer member and the wall. Thus, ANY member capable of being external, or of restraining, or blocking or covering reads on them.



***Conclusion***

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Raymond Alejandro/  
Primary Examiner, Art Unit 1795